CWP Status

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(Credits to B. Hegner)

- A **Community White Paper (CWP)** should describe a global vision for software and computing for the HL-LHC era and HEP in the 2020s

- **The CWP will identify and prioritize the software research and development investments required:**
  - to achieve improvements in software efficiency, scalability and performance and to make use of the advances in CPU, storage and network technologies
  - to enable new approaches to computing and software that could radically extend the physics reach of the detectors
  - to ensure the long term sustainability of the software through the lifetime of the HL-LHC

- **The HSF is engaging the HEP community to produce the CWP via a community process**
  - Initiated as an HL-LHC planning process
  - Aiming for a broader participation (LHC, neutrino program, Belle II, linear collider, ...)
  - The resulting roadmap will be used for the HL-LHC computing TDR and other strategic plans

CWP Kick-Off Workshop in San Diego (23.-26. January)

- ~110 participants, mainly US + CERN
  - Unfortunately very few Europeans from outside CERN
- 2.5 days of parallel topical WG meetings
  - Agenda : http://indico.cern.ch/event/570249/timetable/#all
  - From infrastructure to reconstruction and analysis, through simulation, data management…
  - Notes from (almost) all WG discussions in the WG Google Docs, summary slides in the agenda

This was the beginning for many other topical workshops

June 2017: (almost) concluding HSF Workshop at LAPP/Annecy (26.-30. June)

90 participants:

- US: 48 (8 FNAL)
- CERN: 20 (7 EP/SFT)
- France: 14 (7 LAPP)
- Italy: 3
- UK: 2
- Germany: 2
- Switzerland: 1

Organization:

- Indico Agenda
- Monday: Introduction+Status
- Tuesday: Parallel Sessions of WGs
- Wednesday: Plenaries+WGs
- Thursday: Plenaries+WGs
- Friday: Closeout

4

Working Groups active during the CWP process

- SW Trigger and Reconstruction
- Machine Learning
- Data Access, Organization and Management
- Software Development, Deployment and Verification/Validation
- Data Analysis and Interpretation
- Conditions Database
- Data and Software Preservation
- Event Processing Frameworks
- Physics Generators
- Simulation
- Workflow and Resource Management
- Visualization
- Computing Models, Facilities and Distributed Computing
- Careers, Staffing and Training

Full list of all working groups and their working documents:
http://hepsoftwarefoundation.org/cwp/cwp-working-groups.html

Most WG produced a "CWP chapter" ready for review

- Generally a Google Doc open to comments
- Ranging from 10 to 50 pages! Long documents will be augmented by a shorter executive summary document
- See http://hepsoftwarefoundation.org/activities/cwp.html for details and updates

Documents should contain the analysis of the challenges and the identification of areas for innovation, plus a roadmap of prioritized R&D actions for the next 5 years

- Priority based on the potential impact
- Milestones for the 3 main timescales:
    - 1 year: assessment of the potential of new ideas
    - 3 years (time of HL-LHC computing TDRs): deciding what is worth implementing
    - 5 years: implementation phase

Deadline for single chapters: end of September

- Final documents will be published on ArXiv

- Ideally not more than 30 pages per chapter, with some exceptions

It is a community WP

- Already a good diversity of people in most (but not all) WGs, with non-LHC participants
- Despite the tight timeline, we need to ensure that the community reads and comments the available draft
  - For LHC experiments, the respective coordinators are asked to push

Your feedback is crucial to ensure these papers represent the community view

Deadline for the global CWP: end of October

- Global vision out of the individual documents rather than a summary
- Refer to the individual topical papers for each area details
- Not yet clear if it will include a global, prioritized list of actions or it will be left to a separate annex or the individual documents

Besides the authors, there will be the possibility for everyone to sign the final CWP

Members of the editorial board so far (see HSF site)

● Predrag Buncic (CERN)	● Stefan Roiser (CERN)
● Simone Campana (CERN)	● Liz Sexton-Kennedy (FNAL)
● Peter Elmer (Princeton)	● Mike Sokoloff (U.Cincinnati)
● John Harvey (CERN)	● Graeme Stewart (CERN)
● Maria Girone (CERN Openlab)	● Jean-Roch Vlimant (Caltech)
● Michel Jouvin (LAL Orsay)	
● Mark Neubauer (U.Illinois Urbana-Champaign)	

Several chapters more about SW than computing

- Forward to the relevants person in the HEP community (not only LHC)

3 chapters particularly relevant to GDB audience

- Computing models, facilities and distributed computing: not a (template) computing model but rather an analysis of current infrastructure strengths/weaknesses, an explicitation of the tradeoffs and an identification of R&D areas that will help to build the HL-LHC era infrastructure. Cross-cutting topics with many other WGs. 50 pages!
- Data management, organization and access: in fact mainly focused on data organization versus data access patterns and the impact/potential of new storage technologies.
- Data and SW preservation: not very active as a WG but summarizing a lot of the discussions that happened in the past years around data preservation in HEP